

What is claimed is:

- 1 1. A substantially pure polypeptide comprising an amino acid sequence at least 40%
2 identical to SEQ ID NO:1, wherein the polypeptide inhibits the differentiation of myoblasts
3 into myotubes.
- 1 2. The polypeptide of claim 1, wherein the amino acid sequence is at least 60%
2 identical to SEQ ID NO:1.
- 1 3. The polypeptide of claim 1, wherein the amino acid sequence is at least 80%
2 identical to SEQ ID NO:1.
- 1 4. The polypeptide of claim 1, wherein the amino acid sequence is at least 90%
2 identical to SEQ ID NO:1.
- 1 5. A substantially pure polypeptide comprising the sequence of SEQ ID NO:1.
- 1 6. A substantially pure polypeptide comprising the amino acid sequence of SEQ ID
2 NO:1, with up to 30 conservative amino acid substitutions, wherein the polypeptide inhibits
3 the differentiation of myoblasts into myotubes.
- 1 7. A substantially pure polypeptide encoded by a nucleic acid that hybridizes under
2 high stringency conditions to a probe the sequence of which consists of SEQ ID NO:2,
3 wherein the polypeptide inhibits the differentiation of myoblasts into myotubes.
- 1 8. An isolated nucleic acid encoding the polypeptide of claim 1.
- 1 9. An isolated nucleic acid encoding the polypeptide of claim 5.
- 1 10. An isolated nucleic acid encoding the polypeptide of claim 6.

1 11. An isolated nucleic acid comprising a strand that hybridizes under high
2 stringency conditions to a single stranded probe, the sequence of which consists of SEQ ID
3 NO:2 or the complement of SEQ ID NO:2.

1 12. The isolated nucleic acid of claim 11, wherein the nucleic acid encodes a
2 polypeptide that inhibits the differentiation of myoblasts into myotubes.

1 13. The nucleic acid of claim 12, wherein the amino acid sequence of the polypeptide
2 comprises SEQ ID NO:1.

1 14. The nucleic acid of claim 11, wherein the strand is at least 15 nucleotides in
2 length.

1 15. The nucleic acid of claim 14, wherein the nucleic acid is an antisense nucleic acid
2 that inhibits expression of a polypeptide comprising SEQ ID NO:1.

1 16. The nucleic acid of claim 15, wherein the nucleic acid is at least 15 nucleotides in
2 length.

1 17. A vector comprising the nucleic acid of claim 8.

1 18. A vector comprising the nucleic acid of claim 9.

1 19. A vector comprising the nucleic acid of claim 10.

1 20. A vector comprising the nucleic acid of claim 11.

1 21. A vector comprising the nucleic acid of claim 12.

1 22. A cultured host cell comprising the nucleic acid of claim 8.

1 23. A cultured host cell comprising the nucleic acid of claim 9.

1 24. A cultured host cell comprising the nucleic acid of claim 10.

1 25. A cultured host cell comprising the nucleic acid of claim 11.

1 26. A cultured host cell comprising the nucleic acid of claim 12.

1 27. An antibody that specifically binds to the polypeptide of claim 1.

1 28. A method of producing a polypeptide, the method comprising culturing the
2 cultured host cell of claim 22 in a culture, expressing the polypeptide in the cultured host
3 cell, and isolating the polypeptide from the culture.

1 29. A method of screening for a compound that binds to the protein according to
2 claim 1, the method comprising the steps of:

- 3 a) contacting a test sample with said protein or a partial peptide thereof;
4 b) detecting the binding activity of the test sample to said protein or a partial peptide
5 thereof; and
6 c) selecting a compound binding to said protein or a partial peptide thereof.

1 30. A compound binding to the protein according to claim 1, wherein said compound
2 can be isolated using the method according to claim 29.

1 31. A method of screening for a compound that promotes or inhibits the activity of
2 the protein according to claim 1, the method comprising the steps of:

- 3 a) contacting myoblasts with said protein in the presence of a test sample;
4 b) detecting the differentiation of the cells into myotubes; and
5 c) selecting a compound which can increase or decrease the inhibitory activity of the
6 protein, compared with its inhibitory activity as detected in the absence of said test sample.

1 32. A method of screening for a compound that promotes or inhibits the activity of
2 the protein according to claim 1, said method comprising the steps of:

- 3 a) providing p53-deficient cells with a vector expressing said protein, a vector
4 expressing p53, and a vector expressing a reporter gene in response to p53;
5 b) contacting a test sample with said cells;
6 c) detecting the reporter activity in said cells; and
7 d) selecting a compound that can reduce or increase the reporter activity compared
8 with the activity in the cells without contact with said test sample (control).

1 33. A compound that promotes or inhibits the activity of the protein according to
2 claim 1, wherein said compound can be isolated using the method according to claim 31 or
3 32.